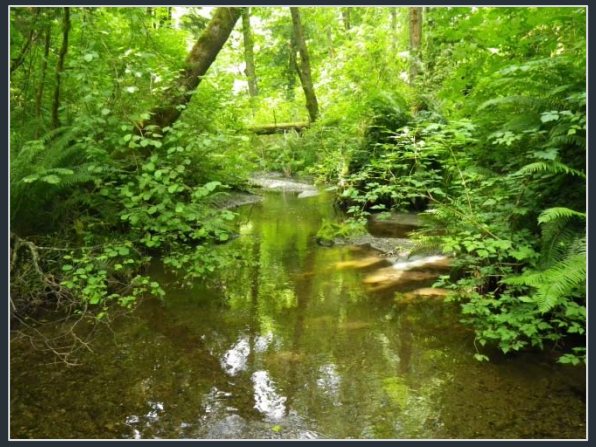
USING B-IBI TO IDENTIFY PUGET SOUND WATERSHEDS FOR RESTORATION AND PROTECTION

Jo Wilhelm (Project Manager), Debra Bouchard, Chris Gregersen, Chris Knutson, Kate Macneale



Funded by EPA federal pass through funds via WA Dept. of Ecology as part of the PSP Action Agenda: Ecosystem Restoration and Protection Project

King County
Department of
Natural Resources and Parks
Water and Land Resources Division

Salish Sea Ecosystem Conference May 1, 2014

B-IBI: PSP Vital Sign Indicator

Ecosystem Recovery Targets

Freshwater Quality B-IBI Targets by 2020:

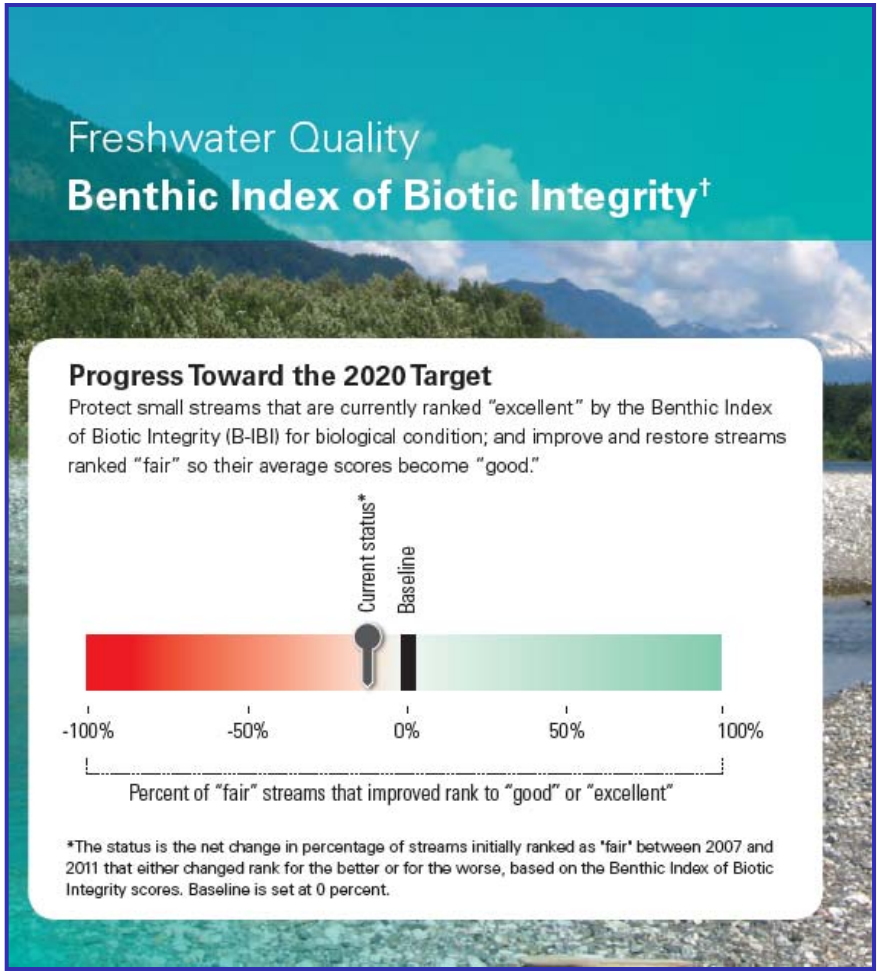
- PROTECTION - All stream drainage areas retain "excellent"
- RESTORATION - 30 basins improve from "fair" to "good"

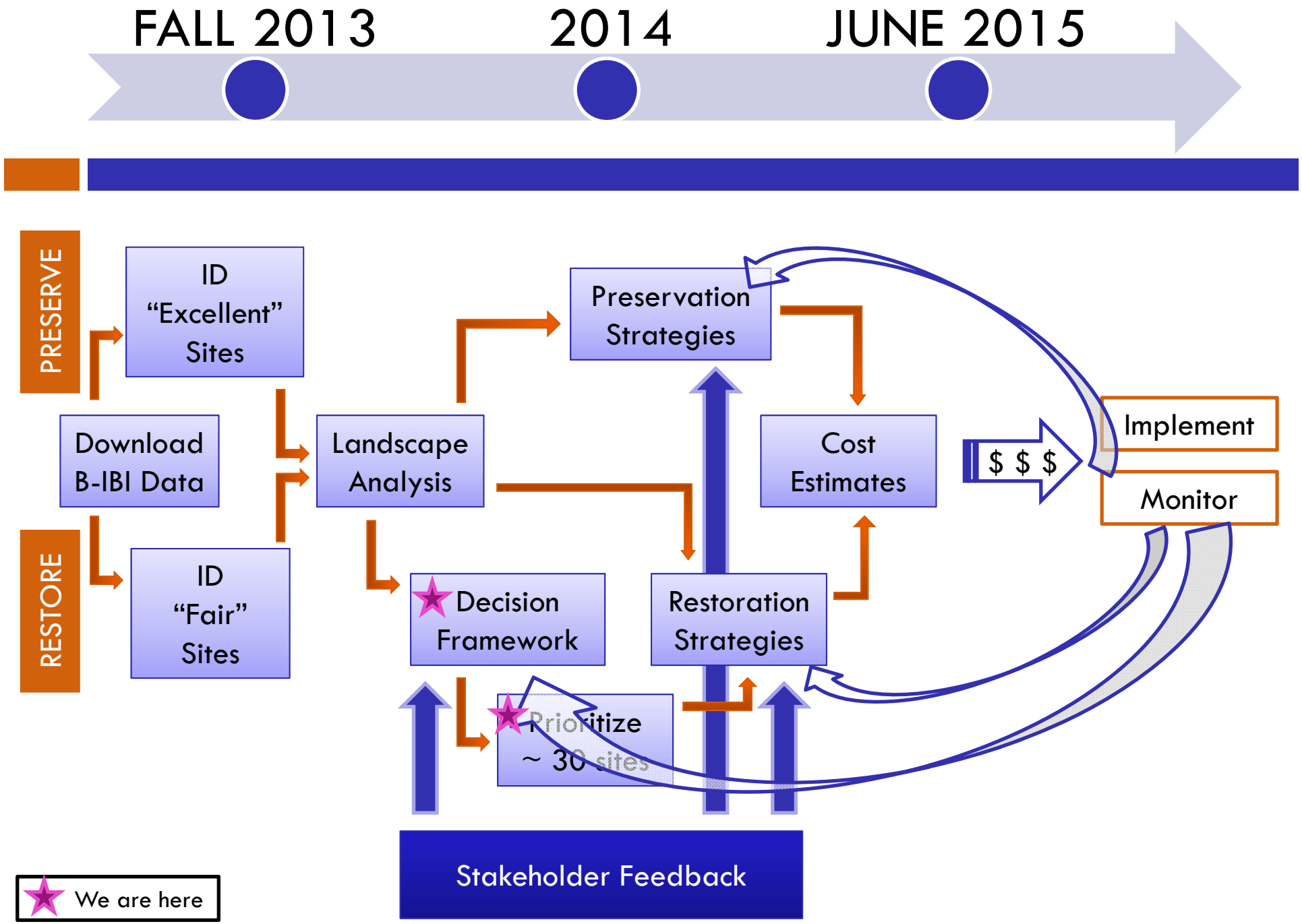
PugetSoundPartnership
LEADING PUGET SOUND RECOVERY

State of the Sound

PugetSoundPartnership
LEADING PUGET SOUND RECOVERY

- On the ground progress towards targets: none
- Funding for King Co. to prioritize basins & develop strategies (this project)
- Currently no funding for restoration & protection implementation or effectiveness monitoring




FALL 2013
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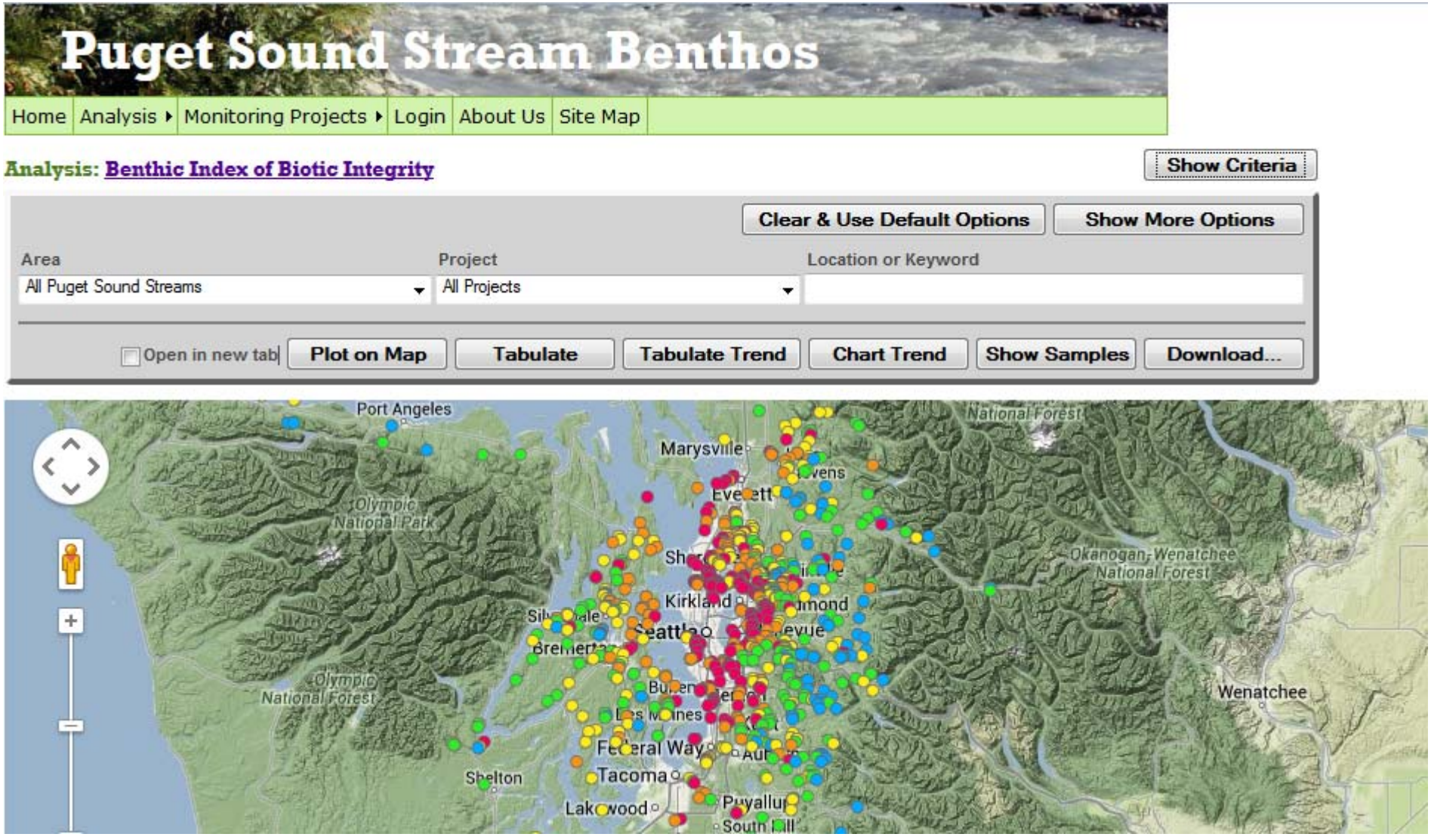
$ $ $
Implement
Monitor
Prioritize ~ 30 sites
Stakeholder Feedback
We are here

Download B-IBI Data: www.pugetsoundstreambenthos.org

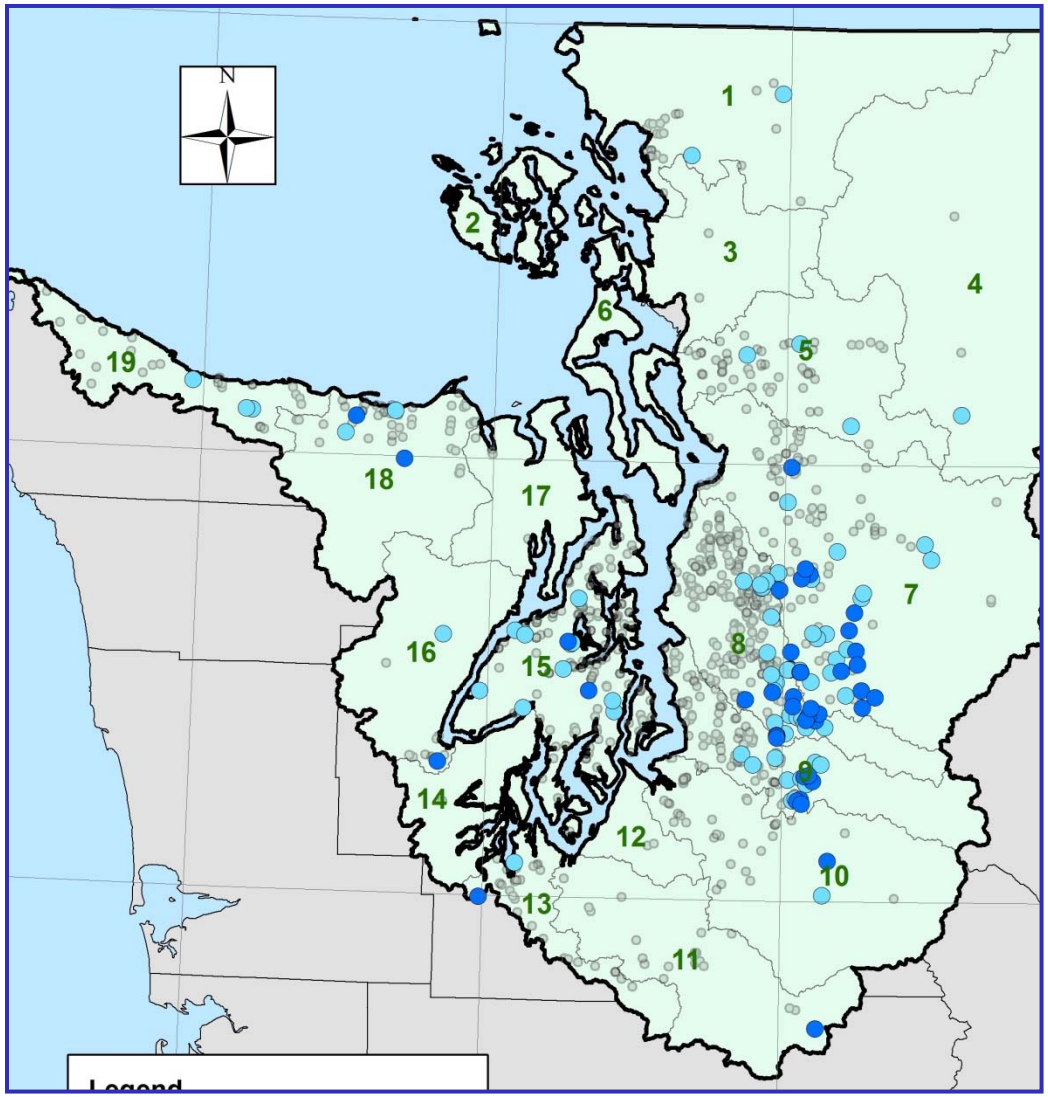


“Excellent” Sites (≥42) = Protection

“Excellent” scores

- ≥ 46
- ≥ 42 and <46

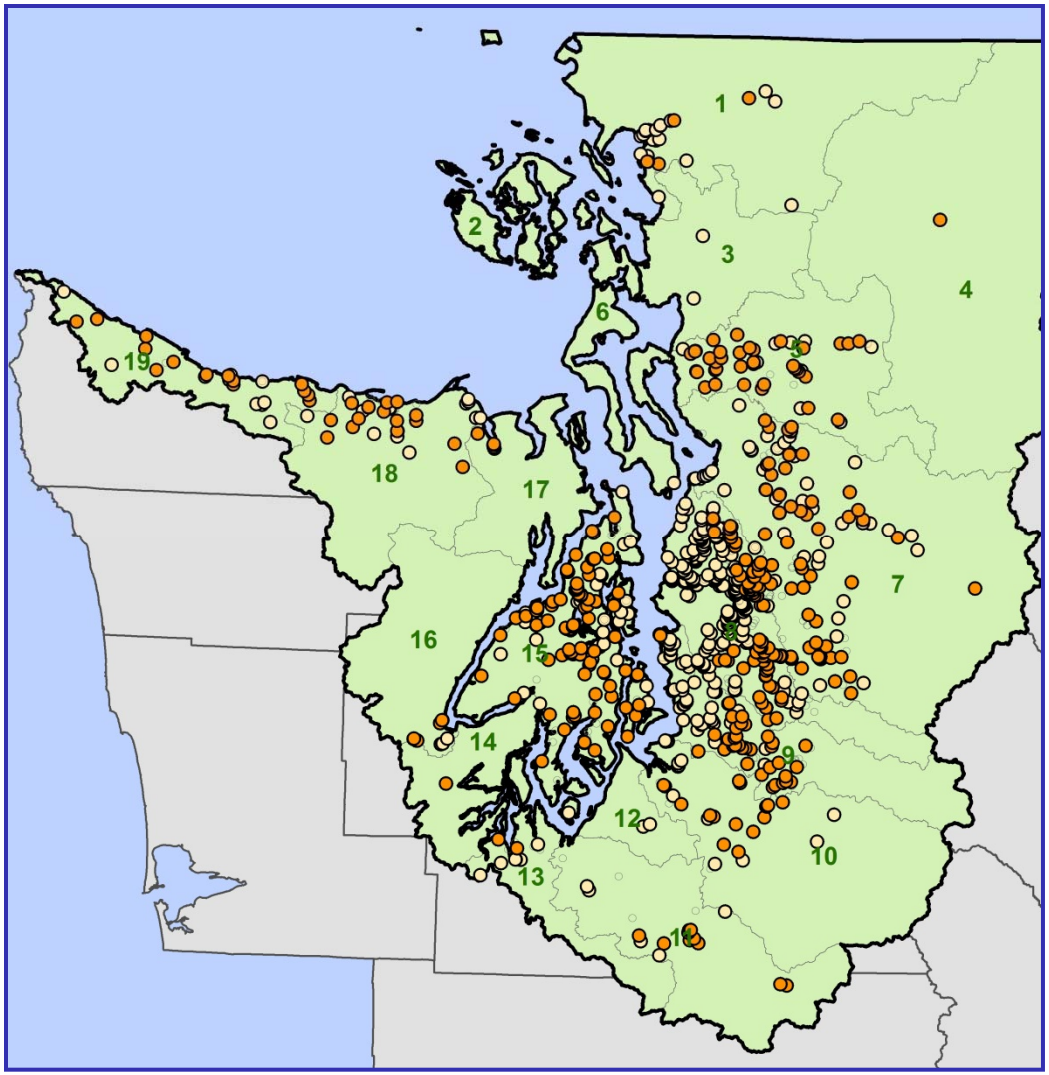
- **121** sites scored “excellent” at least once
- **35** sites had a median “excellent” score
- **33** sites averaged “excellent”



“Fair” Sites (28-36) = Restoration

- “Fair” average
- “Fair” at least once

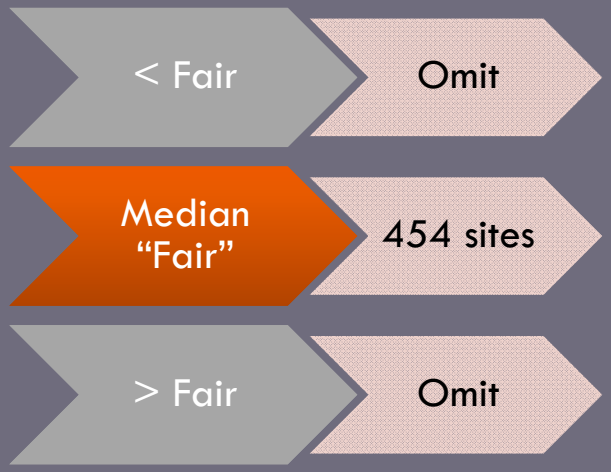
- **648** sites scored “fair” at least once
- **454 sites with median “fair” scores**
- **428** sites averaged “fair”



Restoration Decision Framework

Filtering

Applied first. Criteria used to reduce number of sites considered.



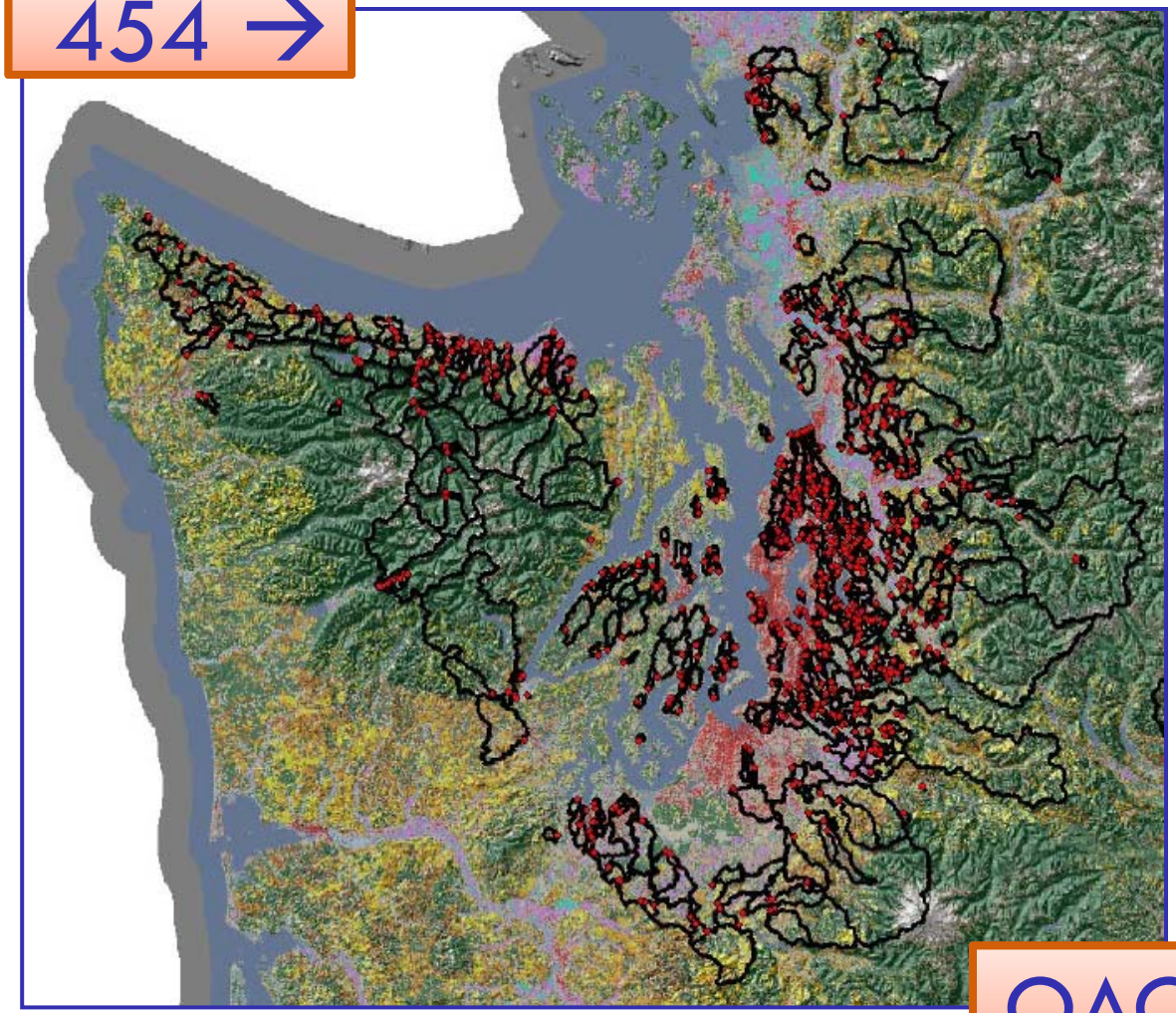
Ranking/Scoring

Applied after filtering. Uses a cumulative ranking to assess the criteria and assign a score to each site so that the sites can be prioritized.

	SITE 1	SITE 2	SITE 3
Watershed Context	2	1	0
Biotic Potential	2	2	1
OVERALL SCORE	4	3	1

Landscape Analysis

454 →

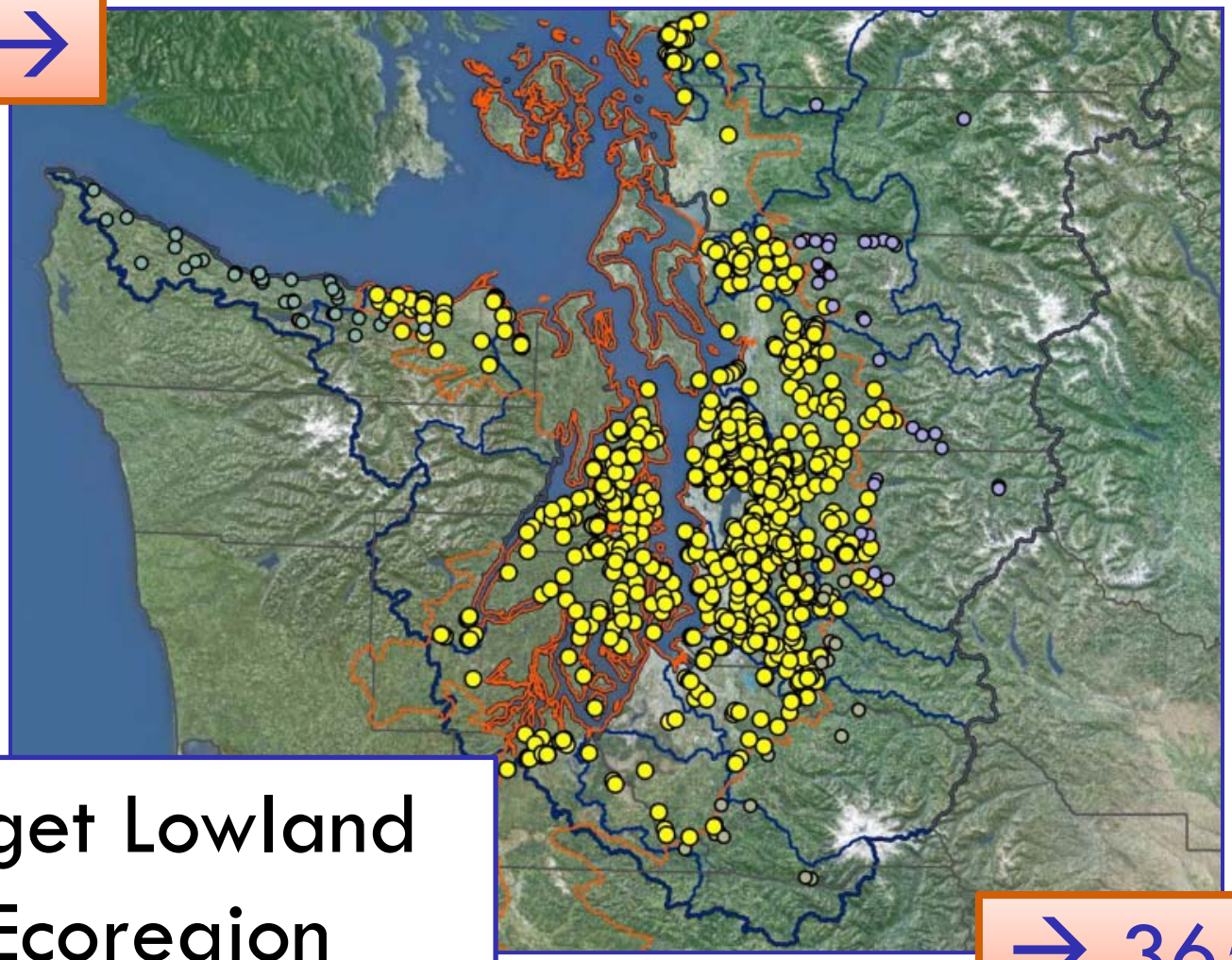


- Basin delineation
- Scale
  - Watershed
  - Local (1km)
  - Buffer (90-m)
- Metrics
  - Landcover
  - Geology
  - Site characteristics

QAQC→432

Initial Filters: Ecoregion

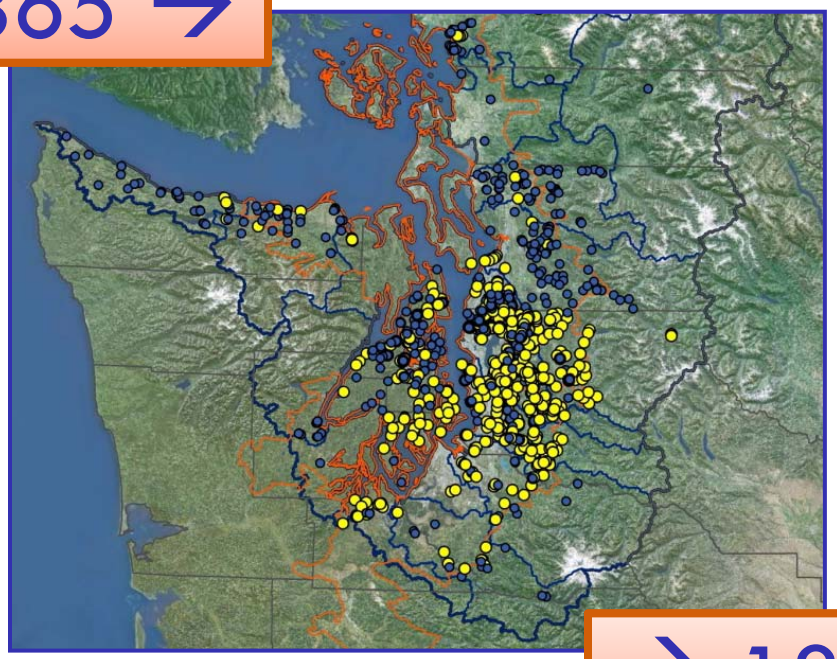
432 →



Puget Lowland Ecoregion

→ 365

Initial Filters: Sampling History



N>2

365 →

→ 180

180 →

Since 2007?

No

Yes

N>4

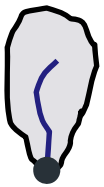
No

Yes

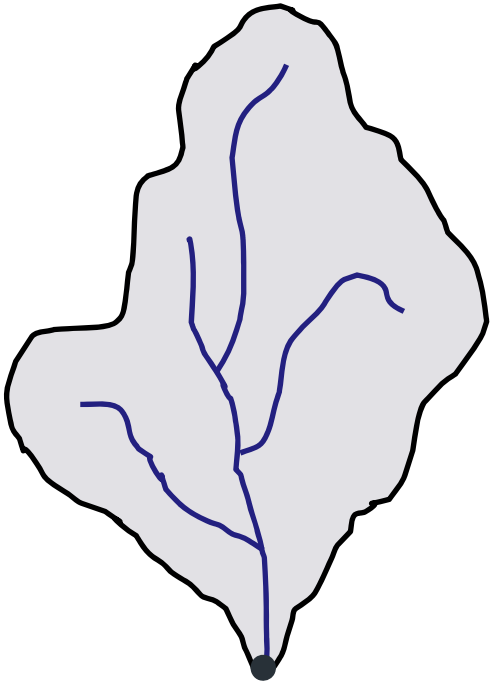
156

Initial Filters: Watershed Area

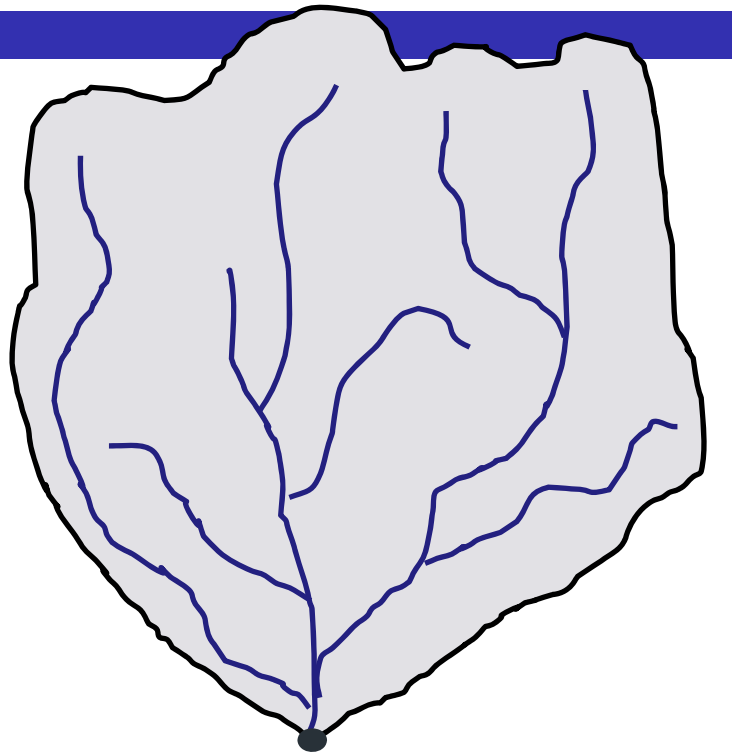
156 →



<200 Acres:
Too Small



200-3000 Acres:
Just Right



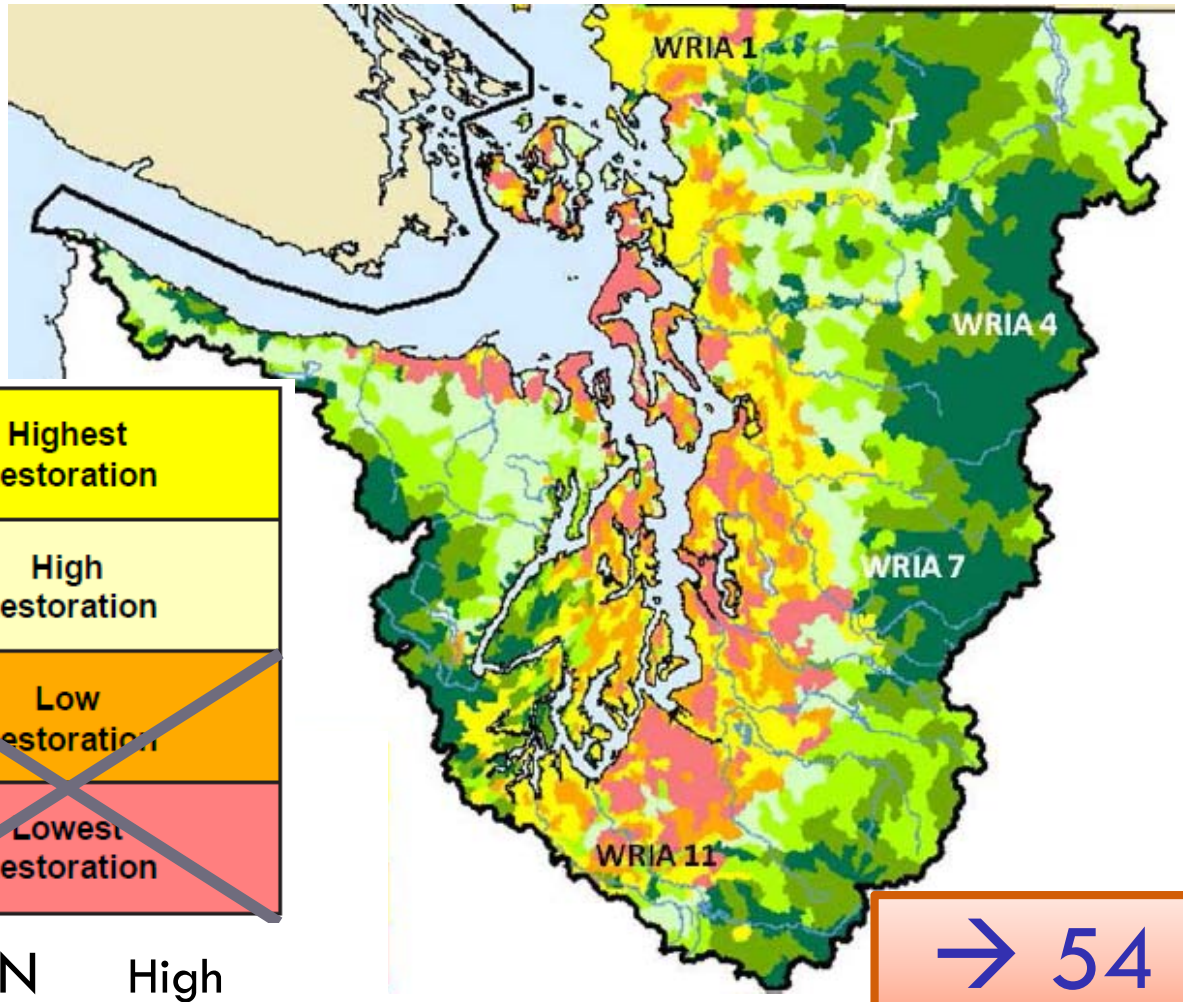
>3000 Acres:
Too Big

→ 72

Initial Filters: PSWC

72 →

PS Watershed Characterization



IMPORTANCE		DEGRADATION: Low	DEGRADATION: High
	High	Highest Protection	Highest Restoration
		High Protection	High Restoration
		Low Protection	~~Low Restoration~~
	Low	Lowest Protection	~~Lowest Restoration~~

→ 54

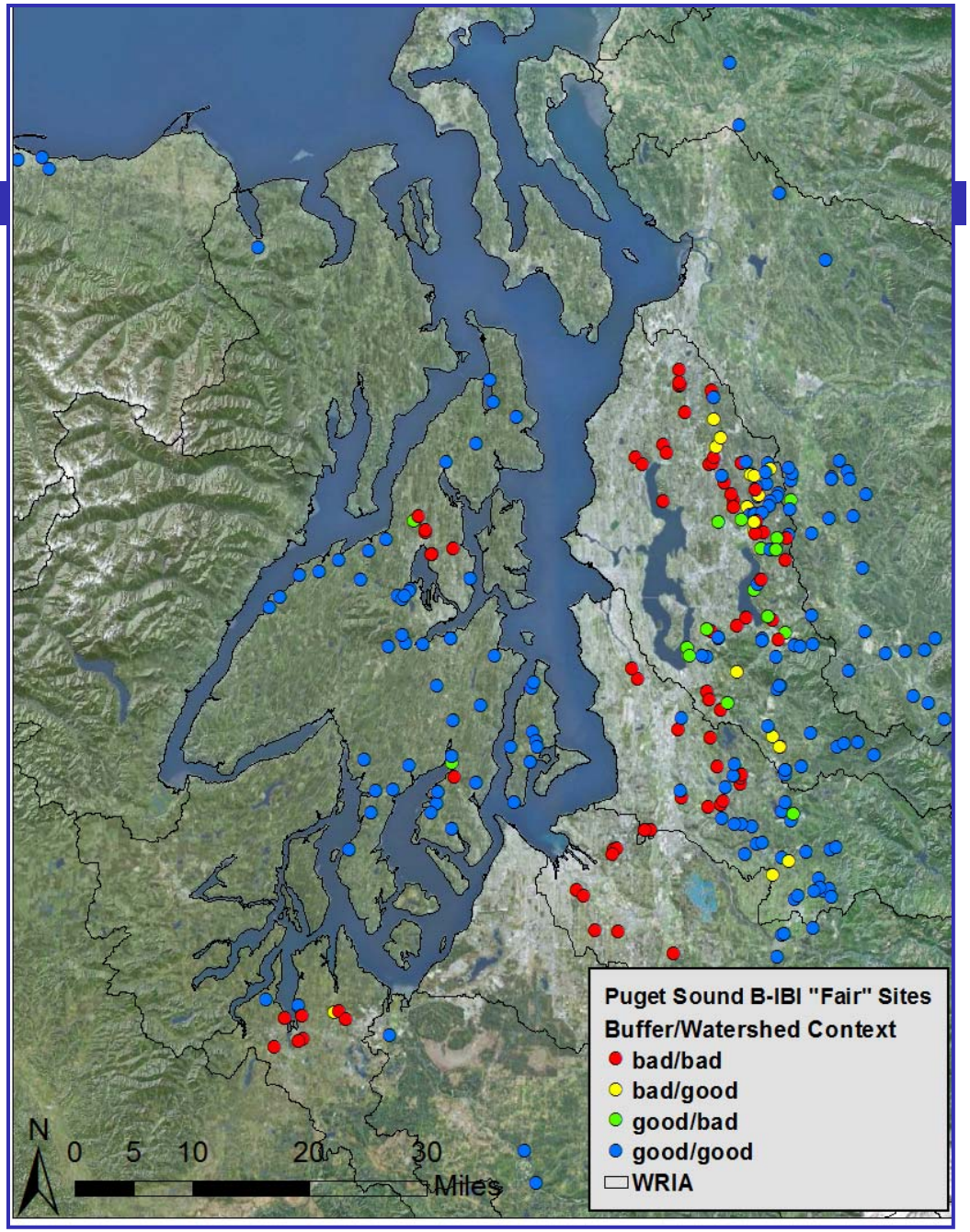
Watershed Context

Worst = 0
- Urban > 30%
- Buffer < 50% natural

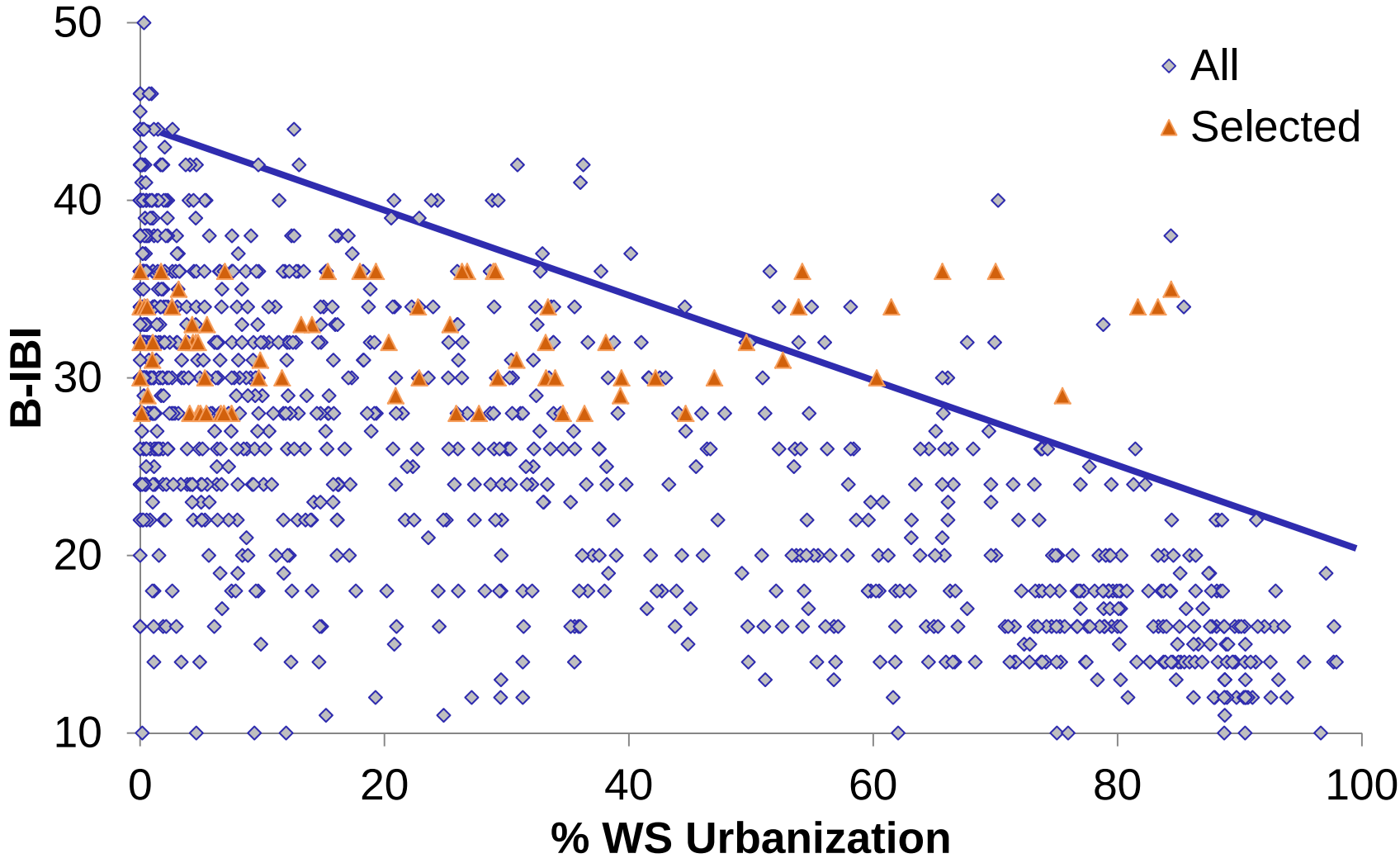
Moderate = 1
- Urban > 30%
- Buffer > 50% natural

Good = 2
- Urban < 30%
- Buffer < 50% natural

Best = 2
- Urban < 30%
- Buffer > 50% natural



Biotic Potential – all scores



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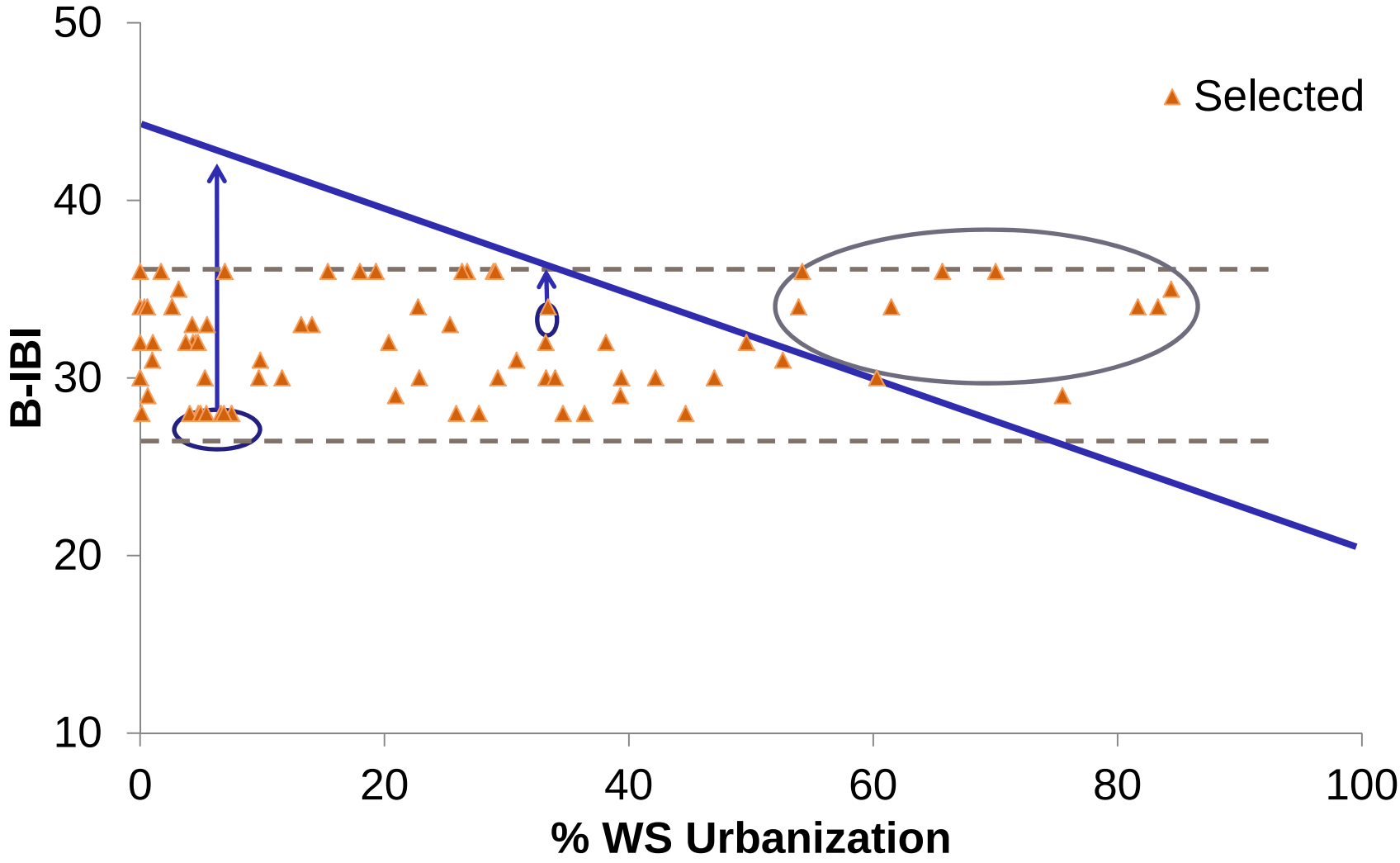
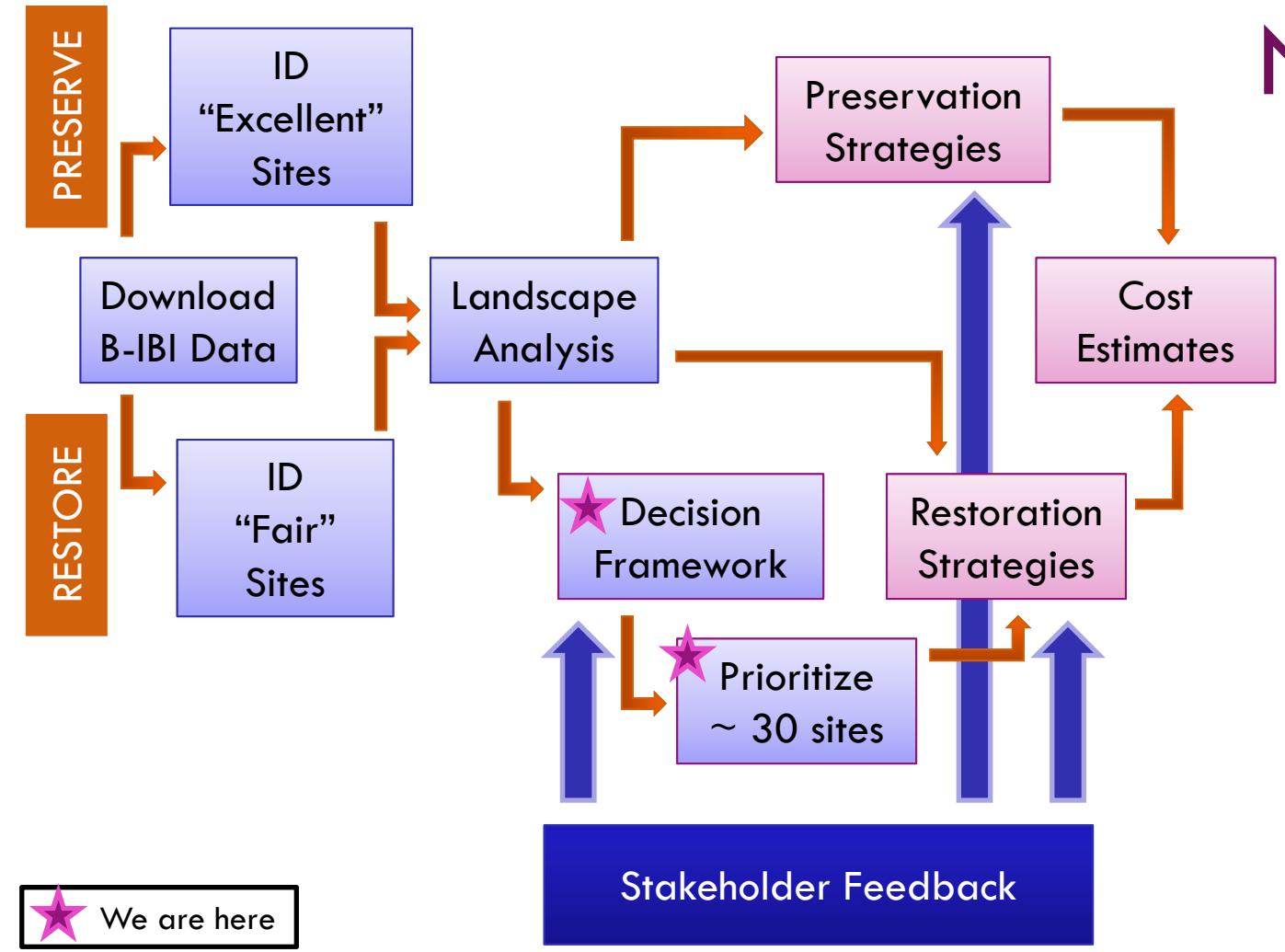


Next Steps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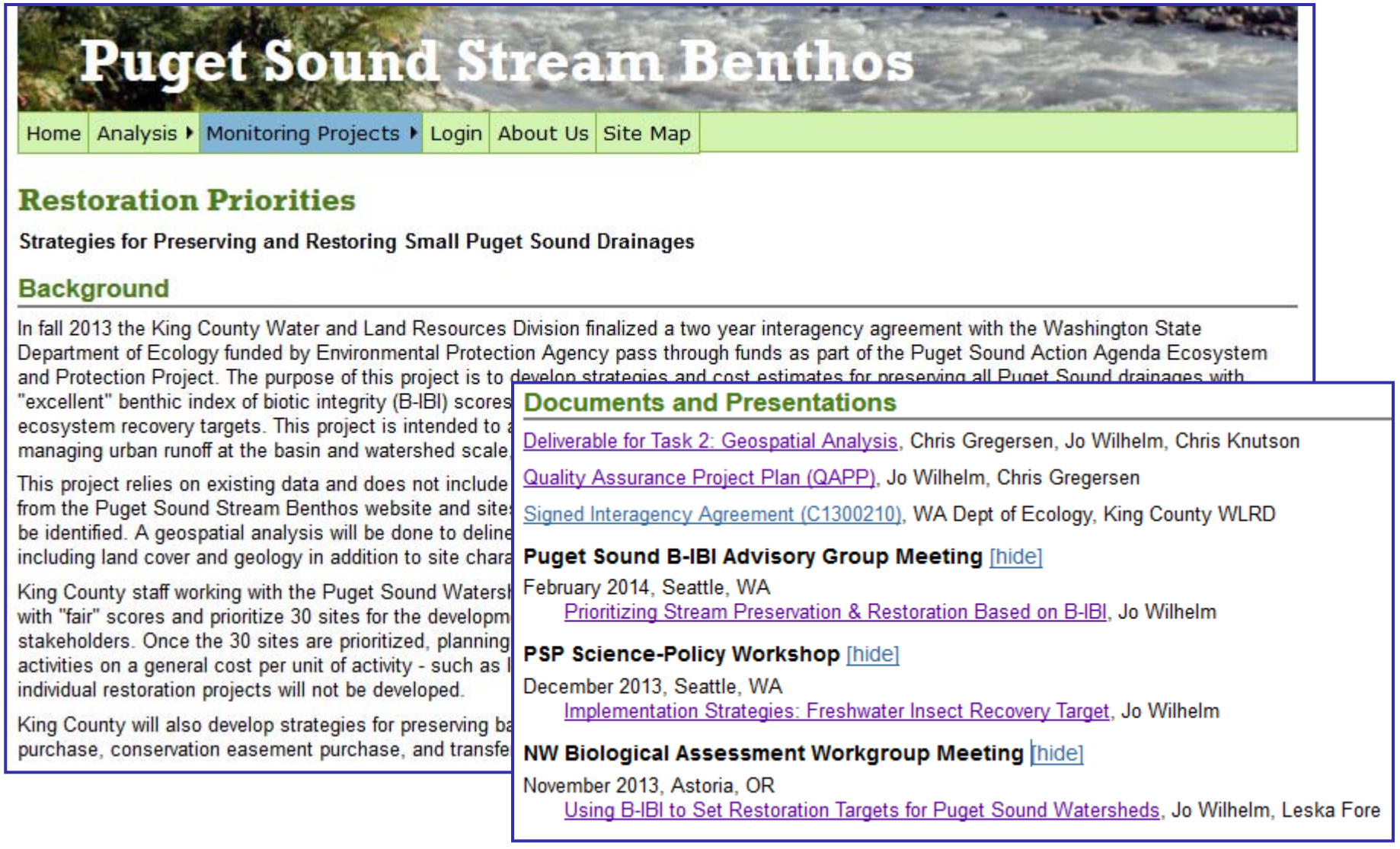
Next Steps: Restoration

What is Feasible? Effective?

- Habitat improvements
- Riparian plantings
- SW retrofits
- Agriculture BMPs
- Education/outreach
- Legislation
- Incentives
- Seeding inverts…

Project Web Page:

http://pugetsoundstreambenthos.org/Projects/Restoration-Priorities-2014.aspx



Acknowledgements

- King County:

  Gino Lucchetti, Kate O'Laughlin, Jim Simmonds, Kerry Thrasher

- GIS:

  Peter Leinenbach (EPA), Ken Rauscher (King Co.)

- PS Watershed Characterization:

  Ecology: Susan Grigsby, Colin Hume, Stephen Stanley, Kelly Slattery

  WDFW: George Wilhere

- Ecology Project Administration:

  Tom Gries, Kim Harper, **Doug Howie**, Kirsten Weinmeister

- Stakeholder Workgroup

?'s/Suggestions/Success Stories

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www.pugetsoundstreambenthos.org